

WHAT IS CLAIMED IS:

1. A method of applying a tone scale function that is compressive, expansive or a combination of both to a digital image, the method comprising:
 - a) decomposing the tone scale function into two or more composite functions that can be applied sequentially to the digital image;
 - b) applying the first composite function to the digital image with a tone scale applicator to produce a tone scaled digital image; and
 - c) applying the second composite function to the tone scaled digital image to produced an enhanced digital image.
2. The method claimed in claim 1, wherein the first composite function is $T_1(x)$, the second composite function is $T_2(x)$, the tone scale function is $T(x)$ and the tone scale function $T(x)$ is substantially equal to $T_2(T_1(x))$, wherein x is a pixel value.
3. The method claimed in claim 2, wherein the maximum slope is greater than or equal to the minimum slope of the second composite function when plotted as a function of input versus output.
4. The method claimed in claim 3, wherein the maximum and minimum slopes are equal to 1.
5. A method of applying a tone scale function that is compressive, expansive or a combination of both to a digital image, the method comprising:
 - a) decomposing the tone scale function into two or more composite functions that can be applied sequentially to the digital image;
 - b) applying the first composite function to the digital image with a tone scale applicator with a spatial filter to produce a tone scaled digital image; and
 - c) applying the second composite function to the tone scaled digital image to produced an enhanced digital image.

6. The method of claim 5 wherein the spatial filter is designed to remove noise, enhance or preserve detail or both.
7. The method claimed in claim 5, wherein the first composite function is $T_1(x)$, the second composite function is $T_2(x)$, the tone scale function is $T(x)$ and the tone scale function $T(x)$ is substantially equal to $T_2(T_1(x))$, wherein x is a pixel value.
8. The method claimed in claim 7, wherein the maximum slope is greater than or equal to the minimum slope of the second composite function when plotted as a function of input versus output.
9. The method claimed in claim 8, wherein the maximum and minimum slopes are equal to 1.
10. A computer program product which practices the method of claim 1.
11. A computer program product which practices the method of claim 5.